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लिंक चेनों के लिए दंतुर पहियों की तकनीकी पूर्ति अपेक्षाएं

Indian Standard

TECHNICAL SUPPLY REQUIREMENTS FOR SPROCKET WHEELS FOR LINK CHAINS

UDC 621·85·051·5

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

April 1991

Price Group 2

Conveyors, Vertical Hoists and Bucket Elevators Sectional Committee, HMD 06

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards on 8 March 1990, after the draft finalized by the Conveyors, Vertical Hoists and Bucket Elevators Sectional Committee had been approved by the Heavy Mechanical Engineering Division Council.

Link chain is important functional component in the conveyor system. To make these link chains to work properly the sprocket wheels on which the chain runs should be of a proper quality.

The material for the sprocket wheel has not been specified and these may be made of a material as agreed to between the purchaser and the manufacturer. However, carbon steel castings conforming to IS 1030 : 1982 'Carbon steel castings for general engineering purposes (*third revision*) or IS 2707 : 1982 'Carbon steel castings for surface hardening (*second revision*) (with necessary heat-treatment as required for the duty conditions), are considered as suitable for sprocket wheels for link chains.

Indian Standard

TECHNICAL SUPPLY REQUIREMENTS FOR SPROCKET WHEELS FOR LINK CHAINS

1 SCOPE

1.1 This Indian Standard covers the technical supply requirements for sprocket wheels for link chains conforming to IS 3948 : 1986. 'Calibrated high tensile steel (round link) chain (electric butt welded) for chain conveyors and coal ploughs used in mines (*first revision*)'.

2 TERMINOLOGY

2.1 For the purpose of this standard the terminology and symbols given in Fig. 1 and Table 1 shall apply.

2.2 The notations shall be as given below (*see* Fig. 1):

P = Chain pitch,
d = Link diameter,
N = Number of teeth in wheel,
L_1 = Length of link,
b = Width of link, and
D = Pitch diameter.

3 DIMENSIONS

3.1 Dimensions for sprocket wheels shall be as specified in Table 1.

3.2 The pitch of the sprocket wheel shall always mean chordal pitch.

3.3 The dimensions of the sprocket wheel rim profile shall be as given in Fig. 1 and Table 1.

3.4 The sprocket wheel teeth and link seating grooves shall be manufactured with accuracy as agreed to between the manufacturer and the purchaser.

4 DESIGNATION

4.1 A sprocket wheel having 11 teeth and suitable for round link diameter 18 mm and pitch 100 mm shall be designated as:

Sprocket Wheel 11 × 18 × 100

5 MARKING

5.1 All sprocket wheels shall be marked with the number of teeth, indication of the source of manufacture and the country of origin.

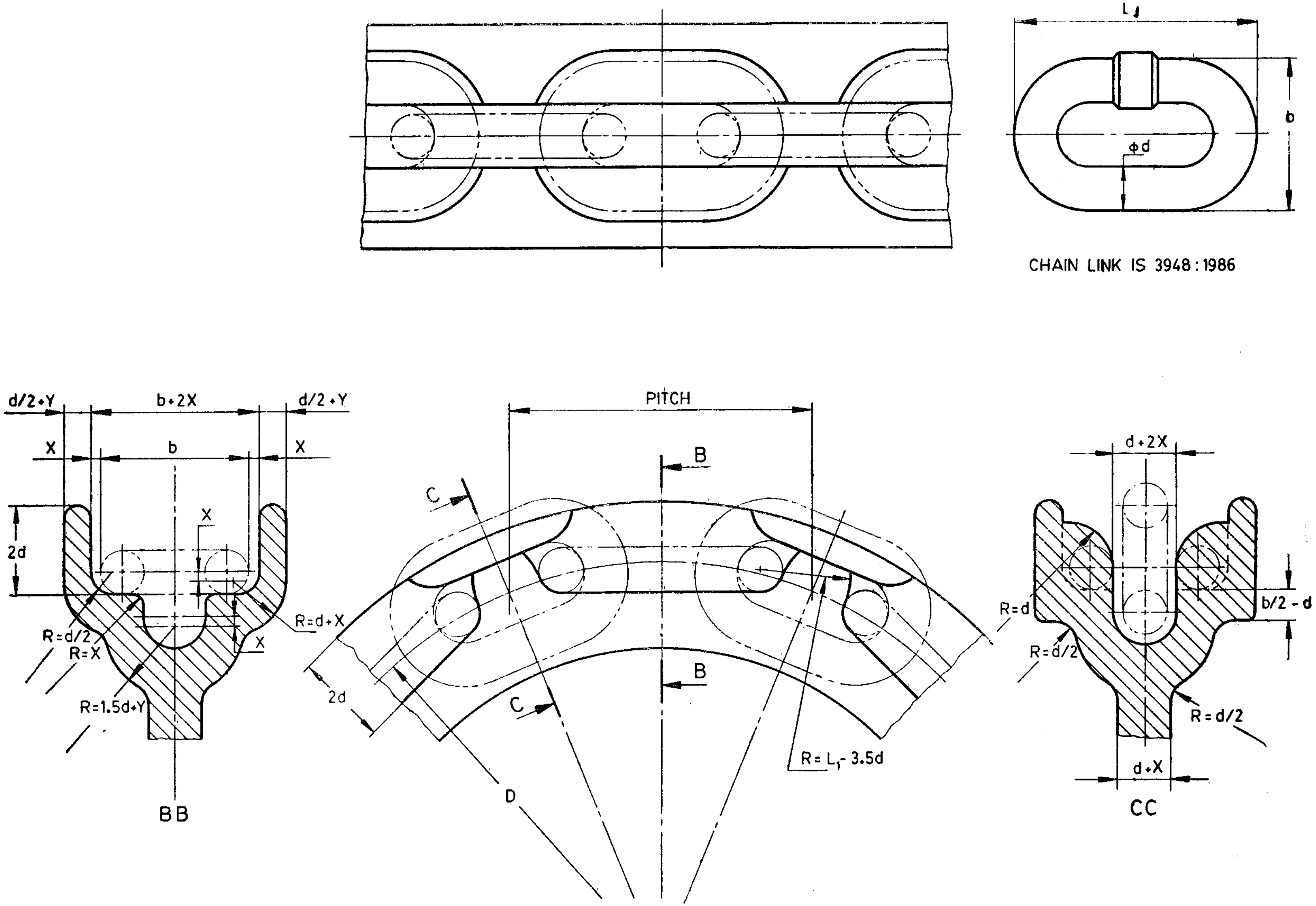

Fig. 1 Sprocket Wheels for Link Chain

Table 1 Sprocket Wheel for Link Chain

(*Clauses* 2.1, 3.2 and *Fig.* 1)

d, mm		14	18	22	24	26	30
L_1, mm		78	100	130	134	144	168
b, mm		48	60	79	79	86	98
x, mm		3·0	3·0	3·0	3·0	3·0	3·0
y, mm		1·5	1·5	1·5	1·5	—	—
N	Angle α $\alpha = \frac{90}{N}$	$D^* = \sqrt{\left(\frac{P}{\sin\alpha}\right)^2 + \left(\frac{d}{\cos\alpha}\right)^2}$					
7	12° 51′	225·682	288·879	388·044	388·169	415·261	486·518
8	11° 15′	256·807	328·718	441·595	441·704	472·539	554·690
9	10° 0′	287·708	368·270	494·757	494·853	529·394	621·436
10	9° 0′	320·827	410·662	551·732	551·818	590·332	692·975
11	8° 11′	351·655	450·122	604·766	604·843	647·055	759·565
12	7° 30′	383·402	490·757	659·377	659·448	705·468	828·139
13	6° 55′	415·177	531·430	714·037	714·102	763·935	896·775
14	6° 25′	446·651	571·716	768·176	768·237	821·845	964·758
15	6° 0′	478·676	612·708	823·264	823·320	880·771	1 033·933
16	5° 37′	510·398	653·312	877·830	877·882	939·139	1 102·453
17	5° 17′	541·894	693·627	932·006	932·006	997·092	1 170·485
18	5° 0′	574·884	735·854	988·773	988·799	1 057·793	1 241·745
19	4° 44′	605·5	775·029	1 041·396	1 041·441	1 114·107	1 307·853
20	4° 30′	637·422	815·902	1 096·322	1 096·364	1 172·862	1 376·826
21	4° 17′	669·491	856·951	1 151·483	1 151·523	1 231·870	1 446·096
22	4° 6′	701·403	897·797	1 206·373	1 206·411	1 290·586	1 515·025
23	3° 55′	733·272	938·590	1 261·190	1 261·226	1 349·225	1 583·863
24	3° 45′	764·655	978·759	1 315·169	1 315·205	1 406·969	1 651·650
25	3° 36′	796·302	1 019·268	1 369·604	1 369·638	1 465·200	1 720·008
26	3° 28′	833·451	1 066·819	1 433·503	1 433·535	1 533·555	1 800·251
27	3° 20′	862·183	1 103·596	1 482·922	1 482·954	1 586·421	1 862·311
28	3° 13′	891·376	1 140·962	1 533·135	1 533·165	1 640·135	1 925·368

*D = Pitch diameter in millimetre.

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